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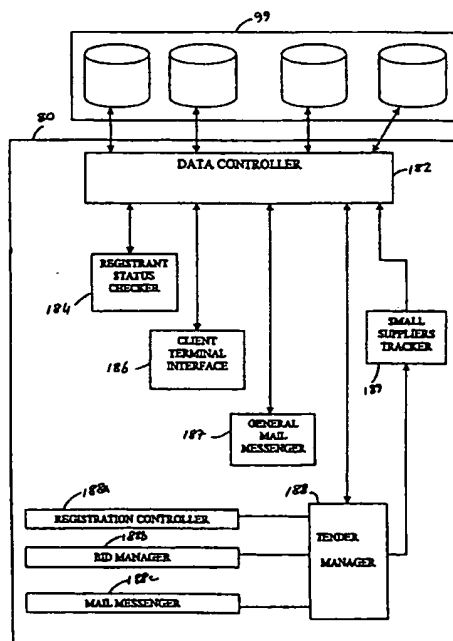
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- (51) International Patent Classification⁷: G06F 17/60 (74) Agent: JEREMY M. BEN-DAVID & CO. LTD.; Har Hotzvim Hi-Tech Park, P.O. Box 45087, 91450 Jerusalem (IL).
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- (71) Applicant (*for all designated States except US*): GLEAN INVESTMENTS B.V. [NL/NL]; Oostmaaslaan 51-73, NL-3063 AN Rotterdam (NL).
- (72) Inventor; and
- (75) Inventor/Applicant (*for US only*): LERER, Benyamin [IL/IL]; 18/4 HaRabi Mevzil Street, 99879 Betar Ilit (IL).
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(54) Title: AGENT SYSTEM FOR ELECTRONIC COMMERCE



(57) Abstract: An agent system of electronic commerce implemented over a wide area computer network includes a host computer system arranged in communicative association with a plurality of client terminals; an electronic catalog containing transaction areas listing available transactions between consumers and suppliers, stored in the host computer system; a client terminal interface implemented, in software for facilitating selection for display on selected ones of the client terminals by consumers and suppliers, via the client terminals, of portions of the electronic catalog; a tender manager implemented in software, for facilitating entering by consumers, via the client terminals, of consumer transaction data including the identification by the consumers of a similar set of goods or services sought to be purchased thereby, into a current consumer tenders database stored in the host computer system, wherein, after a first predetermined time has elapsed during which the set is accumulated, the tender manager is operative to prevent addition to the set of additional goods or services by consumers, and to store the set as a tender for bidding by applicant suppliers seeking to provide the set of goods or services; a bid manager implemented in software, associated with the tender manager, for facilitating entering by applicant suppliers, via the client terminals, of bid transaction data for supplying to the consumers the goods or services in the tender, at terms deemed most competitive in accordance with predetermined rules implemented in the bid manager, wherein the bid manager is operative to permit bidding by applicant suppliers during a second, predetermined time period, after which the bid manager is operative, in accordance with the rules, to determine a

winning supplier; and a messenger implemented in software, for informing the winning supplier and the consumers as to the outcome of the tender, thereby to facilitate supply of the set of goods or services to the consumers by the winning supplier, wherein the tender manager and the bid manager are preprogrammed so as to prevent overlap of the first and second time periods.

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For two-letter codes and other abbreviations, refer to the "Guidance Notes on Codes and Abbreviations" appearing at the beginning of each regular issue of the PCT Gazette.

AGENT SYSTEM FOR ELECTRONIC COMMERCE

FIELD OF THE INVENTION

The present invention relates to electronic commerce performed over wide area networks, such as the Internet.

BACKGROUND OF THE INVENTION

It is well known in the art to utilize wide area networks, specifically the World Wide Web of the Internet, for commercial purposes, for the electronic sale of goods and services. While such sales currently represent a very small proportion of the total volume of goods and services sold by more traditional methods, this is a rapidly growing area, and an increasing number of stores, companies and purchasers are turning to the Internet as a commercial medium.

A principal manner of carrying out e-commerce is shopping by use of catalogs or advertising, in which consumers are invited to perform purchases over the Internet in substantially the same way as they would if they were present in a store, or shopping from a paper catalog. There has more recently become known on-line auctioning, in which participants are invited to compete with each other for purchase of many different types of products, from computers to airline tickets, for example. The basic operating philosophy of on-line auctioning is generally similar to traditional auctions, although the Internet is used as a convenient way of broadening both the participating audiences and the types of goods sold in this manner. Among Internet companies offering on-line auctioning are ONSALE Inc., eBay Inc., uBid Inc., and Priceline.com Inc.

While the auctioning services offered by these companies have undoubtedly increased the volume of electronic commerce, they are directed essentially to the individual consumer, rather than to the corporate or institutional purchaser, such as, government offices, construction companies, hotels, and various providers of services. These corporate and institutional bodies not only proffer services and goods of various types, but they are also consumers, albeit on a much larger scale than the usual participants in on-line auctions. A main difference between these bodies as consumers and the current Internet auction purchasers, therefore, is that these corporate and institutional bodies purchase very large quantities of supplies, often well beyond quantities that an Internet auction company

is able to offer. Furthermore, these bodies traditionally have their known suppliers from whom they can obtain good terms. Finally, while many types of goods are available via Internet auction sites, industrial type items such as building materials, raw materials for industry, food supplies for hotels, fabric for clothing manufacturers, to name but a few, are not the sort of items that are traditionally traded via the Internet.

It thus appears that there exist no known system for enabling corporate or institutional purchasers to advantageously switch their high volume purchases to e-commerce, notwithstanding the fact that the volume of transactions of these bodies, if performed via e-commerce methods, is potentially several orders of magnitude greater than the current level of retail sales via on-line auctioning.

SUMMARY OF THE INVENTION

The present invention seeks to provide an 'agent' system for electronic commerce (ASE) which, while being open to individual purchasers, encourages potential corporate and institutional consumers to trade bodies over a wide area network, such as the Internet, or an internal Intranet network.

More particularly, the ASE of the present invention seeks to encourage potential consumers to pool together their purchase orders into larger lots for which suppliers can compete by offering the lowest possible price, thereby enabling the orders to be filled in a manner far more efficient than employed today by use of human sales representatives.

There is thus provided, in accordance with a preferred embodiment of the present invention, an agent system for electronic commerce implemented over a wide area computer network, which includes:

- a host computer system arranged in communicative association with a plurality of client terminals;

- an electronic catalog containing transaction areas listing available transactions between consumers and suppliers, stored in the host computer system;

- a client terminal interface implemented in software, for facilitating selection for display on selected ones of the client terminals by consumers and suppliers, via the client terminals, of portions of the electronic catalog;

a tender manager implemented in software, for facilitating entering by consumers, via the client terminals, of consumer transaction data including the identification by the consumers of a similar set of goods or services sought to be purchased thereby, into a current consumer tenders database stored in the host computer system, wherein, after a first predetermined time has elapsed during which the set is accumulated, the tender manager is operative to prevent addition to the set of additional goods or services by consumers, and to store the set as a tender for bidding by applicant suppliers seeking to provide the set of goods or services;

a bid manager implemented in software, associated with the tender manager, for facilitating entering by applicant suppliers, via the client terminals, of bid transaction data for supplying to the consumers the goods or services in the tender, at terms deemed most competitive in accordance with predetermined rules implemented in the bid manager,

wherein the bid manager is operative to permit bidding by applicant suppliers during a second, predetermined time period, after which the bid manager is operative, in accordance with the rules, to determine a winning supplier; and

a messenger implemented in software, for informing the winning supplier and the consumers as to the outcome of the tender, thereby to facilitate supply of the set of goods or services to the consumers by the winning supplier,

wherein the tender manager and the bid manager are preprogrammed so as to prevent overlap of the first and second time periods.

Additionally in accordance with a preferred embodiment of the invention, the system also includes a database of registered users, wherein the client terminal interface is further operative to invite a user to login and check register and said system also includes:

a database of registered users; and

a registrant status checker, implemented in software, for checking legality of a user seeking to enter the transaction areas so as to add to the set of goods or services during the first predetermined time period if the user is a consumer, and seeking to bid on a tender during the second predetermined time period, if an applicant supplier, wherein, in the event of a user not having a legal status, the registrant status checker is operative, via the client terminal interface, to prevent the entry of the non-legal user into the transaction areas.

Further in accordance with a preferred embodiment of the invention, there is also provided a data controller, implemented in software, for storing different types of data

entered by users from the client terminals across the network into the host computer system, into different predetermined databases, wherein the data controller is operative to cooperate with the client terminal interface, the tender manager, the bid manager, and the registrant status checker, so as to receive data therefrom and to provide selected data thereto.

Additionally in accordance with a preferred embodiment of the invention, the client terminal interface is operative to provide the transaction areas of the electronic catalog, for viewing only, to non-logged in users, and in response to an attempt by a non-logged in user to enter transaction data, the client terminal interface is operative to invite users to login so as to permit entering of transaction data thereby.

Further in accordance with a preferred embodiment of the present invention, the agent system also includes a small suppliers tracker, implemented in software, and associated with the tender manager, for maintaining, at least for the duration of the second time period, a database for small suppliers not wishing to enter bid transaction data for the entire set of goods or services in a single tender, and wherein the small suppliers tracker and the client terminal interface are selectably operable to display on the client terminals of the small suppliers, details of small suppliers listed in the database for small suppliers, thereby facilitating collaboration between at least two of the small suppliers so as to provide a single, joint bid, for the entire set of goods or services in the tender.

BRIEF DESCRIPTION OF THE DRAWINGS

The present invention will be more fully understood and appreciated from the following detailed description, taken in conjunction with the drawings, in which:

Fig. 1A is a diagrammatic representation of the agent system of electronic commerce (ASE) of the present invention;

Fig. 1B is an exemplary simplified representation of an introductory, electronic, interactive catalog page constituting a host computer system for entry into the ASE of the present invention;

Fig. 1C is a block diagram illustration of the site manager of the ASE of the present invention;

Fig. 1D is a block diagram showing arrangement of the interactive catalog of the ASE of the present invention;

Fig. 2 is a flow chart showing initial entry into and navigation within the interactive catalog depicted in Figs. 1B and 1D;

Fig. 3A is a more detailed flow chart showing navigation through the buyer area depicted in Fig. 2;

Fig. 3B is a flow chart showing navigation within a specific buyer area depicted in Figs. 2 and 3A;

Fig. 4 is a flow chart illustration of operations performed by the tender manager of Fig. 1D, in response to buyer activity in the interactive catalog depicted in Figs. 1B and 1D;

Fig. 5A is a more detailed flow chart showing navigation through the supplier area depicted in Fig. 2;

Fig. 5B is a flow chart showing navigation within a specific supplier area depicted in Figs. 2 and 5A;

Fig. 6 is a flow chart illustration of operations performed by the tender manager of Fig. 1D, in response to buyer activity in the interactive catalog depicted in Figs. 1B and 1D;

Fig. 7 is a flow chart showing navigation within a small supplier area seen in Fig. 5B; and

Fig. 8 is a flow chart illustration of operations performed by the small suppliers tracker of Fig. 1D.

DETAILED DESCRIPTION OF THE INVENTION

Referring now to Fig. 1A, there is provided an agent system for electronic commerce (ASE), implemented via a wide area network, for enabling buyers of goods and services to pool their orders, and for enabling suppliers to fill such orders, in a highly efficient and cost-effective manner. The ASE of the invention, which preferably is implemented via the World Wide Web of the Internet, essentially includes a host computer system 10, which may be one or more servers on which is stored a software system including a plurality of databases 99 controlled by a site manager 80, for facilitating electronic commerce via ASE of the present invention, between a plurality of client terminals 12. Client terminals 12 may be any computerized terminal devices having network access capability, for use by either 'consumers' or 'suppliers.' The host computer system 10 is used to contain the various databases, shown and described hereinbelow, required in order to operate the ASE, as well as any required software. The types of software functions required in the system of the present invention are known in the art, and are thus not specifically described herein.

In the present invention, a 'consumer' is any individual, or corporate or institutional body, registered by the site manager 80 as being allowed to perform purchase transactions of goods and services via the ASE of the present invention; and a supplier is similarly, any individual, or corporate or institutional body, registered as being allowed to commit itself to supplying sought goods via the ASE of the present invention. Furthermore, while reference throughout is made to a single host computer system 10, there may also be one or more 'mirror' sites which perform the same functions as the host computer system 10, and in conjunction therewith. Typically, a plurality of servers are located in various different geographical locations, and, in accordance with any suitable, commercially available, predetermined communications protocol, are used to manage the transactions to be performed via the ASE.

Client terminals 12 may be any suitable interface devices, and may include any personal computer, network computer terminals, specialized Internet terminals such as the iMac[®] manufactured by Apple Computer, Inc., television sets incorporating WEBTV[®], hand held and palmtop computers, mobile telephones, and the like. As seen in the drawing, client terminals 12 interface with servers 10 via communications media 14 which may be any sort of wire and/or wireless networks, including fiber optic, copper, cable, satellite, as

well as any other suitable sort of broadcast medium, and using any selected type of commercially available communications protocol for this purpose.

Referring now to Fig. 1B, the main medium for interfacing between consumers and suppliers is an interactive, electronic catalog resident in the host computer system 10, and controlled by site manager 80. In a preferred embodiment of the invention, the electronic catalog is provided as so-called "web page," wherein specific files are called from server memory when the host computer system or web site is accessed. As with Internet sites hosting search engines of various types, only the highest levels in the catalog, as exemplified in Fig. 1B, may be stored in memory, while the remaining 'pages,' encountered by a user as he performs transactions, are dynamic pages formed by the CGI (common gateway interface), JAVA, NSAPI, ISAPI or WSAPI protocols, for example, by use of suitable software resident in the system, and in accordance with data stored in one or more ASE databases and data entered by the user. Such software is in widespread commercial use on the Internet, and may be as used, for example, in the USPTO databases, accessed via the URL <http://www.uspto.gov>, or via any of the Internet search engines, such as Lycos®, Infoseek®, Excite®, and so on.

The introductory catalog page depicted in Fig. 1B, is constructed in a manner analogous to an Internet home page, and includes a link 20 to information "ABOUT THE SITE," through which files containing information about various aspects of the system and its use, may be accessed; an entry area 22 through which users can present themselves for approval prior to entering transactions areas of the system; and a transaction viewing area 24 via which the various transaction areas can be perused. While no transactions can be initiated, without first being approved or registered at the time of use, entry to the transaction viewing area 24 is, in accordance with a preferred embodiment of the invention, unrestricted, allowing non-users, and registered users that have not logged in a particular session alike, to peruse the available transactions.

Preferably, at all times during a user's stay in the transaction viewing area, there is a link which enables him to register or login while remaining at the transaction or other area of the site where he was when registering. This obviates a user having to leave a particular area when logging in, and enables him maximum flexibility to 'window shop.'

The term 'transaction' is used herein to mean any act of, or which may lead to, a financial transaction concerning goods or services which may be requested by one or more

consumers and supplied by a supplier, and which therefore, according to the rules of participating in ASE, is liable to become a contractual undertaking of the supplier supplying contracted goods or services, and the consumer paying for them. Use of the term 'transaction' not intended to imply the real-time purchase of goods or services as, by its very nature, the system of the invention is a time divided system enabling consumers and suppliers to be matched with each other so as to facilitate a transaction therebetween, and, as will become appreciated from the continuing description below, suppliers cannot bid for a tender that is still open for registration by consumers, and, can only start bidding to supply the tender after it has been closed to consumers.

Entry area 22 contains typically two links, a first link 26 for users whose details are already stored within a user information database, and which contains various identifying and contact information, as well as any necessary financial data, decoding on whether the user is a consumer or supplier; and a second link 28, via which first time users can register. In accordance with a preferred embodiment of the present invention, as a participant can be a consumer or a supplier, and as participants may be private individuals, or corporate or institutional bodies, each participant has an identity registered by the system, indicative of his participation as a consumer or supplier, or both, as well as his status as a representative of a corporate or institutional body.

Transaction viewing area 24 contains links to enable users - whether registered or not - to enter the site and peruse the various transaction areas. There is thus provided a plurality of 'consumer area' links, seen at 30, containing links to the following:

1. lists of CURRENT consumer areas 32, namely, tenders in which it is still possible to register as a consumer;
2. a CLOSED consumer area 34, namely, tenders which are now closed to consumers and which await announcement of a successful bid by a supplier;
3. a FUTURE consumer area 36, namely, future tenders scheduled, whereat a user can register to receive an e-mail notification at the time the tenders are opened; and
4. a REQUEST consumer area 38, whereat a user can initiate a tender not currently scheduled.

There is also provided a plurality of 'tender' or 'supplier area' links, seen at 40, containing links to the following:

1. lists of CURRENT tenders 42, namely, tenders for which it is possible to bid as a supplier;
2. an OPEN IN CONSUMER AREA 44, namely, tenders which are currently open to consumers but not yet open to suppliers, whereat a user can register to receive an e-mail notification at the time the tenders become open to suppliers;
3. a list of PREVIOUS tenders 46, showing previous tenders and the winning bids; and
4. a REQUEST FOR TENDERS 48, whereat a user can initiate a tender offering certain goods or services for sale.

Referring now to Fig. 1C, the ASE of the present invention is controlled by a site manager, generally referenced 80, which is a software system containing a plurality of software modules, which include:

1. a data controller 182, for controlling data entry into databases 99, shown and described hereinbelow in detail in conjunction with Fig. 1D, extracting data from the databases for display or transfer to an alternative database, and evaluation of data stored thereat;
2. a registrant status module 184, associated with registrant data databases 52, 62 (Fig. 1D) for checking the legality of a user in entering transaction areas of the system;
3. a client terminal interface module 186, for posting requested information to a client terminal 12 (Fig. 1A), including various level of information to allow him to select a particular area or tender, both for consumers and applicant suppliers;
4. a general mail messenger 187 for sending non-tender-specific e-mail messages and faxes to site users;
5. a tender manager 188 for controlling the opening and closing of tenders in consumer and supplier areas, which has associated therewith:

A. a registration controller 188a for controlling registration of consumers for specific tenders and sum tender quantities;

B. a bid manager 188b for evaluating evaluate lowest bid;

C. a mail messenger 188c for sending out notification of winning bid to tender-specific supplier and consumers, as well as reminders, if requested. It will be appreciated that mail messenger 188c is used here not only to send messages via e-mail,

but also to optionally send fax notifications. It is also envisaged that tender manager 188 may, in response to an on-screen inquiry from a user, provide information concerning the winning supplier, as described below. The functions of the above-mentioned modules will be more fully understood from the further description of the system, below;

6. a small supplier's tracker 189, for facilitating entry of 'small suppliers,' namely, potential suppliers who do not wish to bid for the entire quantity of goods or services of a particular tender, but who are interested in collaborating with other small suppliers with whom they would be able to bid for the entire quantity of the tender.

Referring now to Fig. 1D, the web site or interactive catalog of the ASE of the present invention, is preferably divided, as described above with respect to the introductory, electronic, interactive catalog page seen in Fig. 1B, into a consumer area 50, and a supplier area 60, each having a plurality of databases. Data controller 182 is operative to control the flow of data among various of these databases, depending both on the type of information contained therein, as well on timing, as described below. Both areas are controlled by site manager 80, shown and described hereinabove, in conjunction with Fig. 1C.

Consumer area 50 has a plurality of databases, including the a registered consumers database, referenced 52; a database of current tenders, referenced 54; a database of closed tenders, referenced 56; and a database of future tenders, referenced 58.

Registered consumer database 52 contains all data pertaining to registered users having 'consumer' status. The same database is used for suppliers, although this is shown separately in the drawing, so as to emphasize data fields that are status specific, namely, which pertain to the status of a user as a registered consumer or supplier, or both. This data may include the name of the user, an ID # or password used to gain access to the consumer interface, various contact details, information pertaining to previous tenders in which the consumer participated; credit card or other relevant financial information; any relevant corporate or institutional details, for example, if the user is an individual representing such body, any cross-associations with other registered consumers, for example, if two individuals are authorized to represent the same body; any limitations or restrictions applied to the consumer, with regard to maximum orders, the removal of his status as a representative of a particular body, and so on; and any remarks, such as a desire to receive updates concerning new tenders for specific goods or services, and so on.

Database 54 contains all data relevant to current consumer tenders, namely, those tenders which are still open to additional purchase requests, and which have thus not yet reached their closure date, at which time they become open to suppliers only, as described below. Data relevant to current consumer tenders may include the 'areas' of goods or services to which a particular tender relates, described in greater detail hereinbelow in conjunction with Figs. 2-4; a geographical region to which a tender relates, namely, the geographical area to which the requested goods or services are to be supplied; the closure date, after which the tender cannot receive any additional purchase requests, and is passed over to the supplier area for bidding; the total current quantity of goods or services requested; any specific delivery conditions; and remarks, this normally being any specific details applicable to the tender, for which no other field is applicable.

As mentioned above, of critical importance in the ASE is the date on which a tender closes to consumers. As mentioned above, prior to closure of a tender to consumers, suppliers cannot bid. In view of the time factors relevant to supply of the tendered goods or services, namely, that the consumers must receive details of the winning supplier, cost, ad so on, particularly if the consumer is a commercial body or institution; and that the goods or services are required to be supplied within a specified, contracted time frame, database 56 contains details of all tenders which have closed to consumers, and which have now been opened to suppliers. Essentially, this database is the same as database 66, labeled 'database of tenders open to supplier bids,' although access to specific fields therein is limited, depending on whether a user has consumer or supplier status.

The supplier area 60 thus contains databases which are parallel to those in the consumer area 50, including a database 62 of registered suppliers, with data fields similar to those in registered consumers database 52, but seen to have one or more additional fields, particularly fields containing previous bid data and bank information; as well as database of tenders not yet open to suppliers, referenced 64, which may be the same database as current consumer tenders database 54, but with limited access, depending on the consumer of supplier status of a user.

Once supplier bidding has closed on any tender, site manager 80, via data controller 182, is operative to move it to a database 68 of tenders closed to suppliers. There may also be provided either in the consumer area or in the supplier area or both, a database of future

tenders, referenced 58. This includes all tenders that are planned, including tenders initiated by consumers of suppliers.

There is also provided a database 69, for each specific tender, identified as 'tender #,' containing the details of all small suppliers wishing to collaborate with other small suppliers, as described above in conjunction with Fig. 1C, which is created and maintained for the duration of a supplier tender, by small suppliers tracker 189 (Fig. 1C).

Referring now to Fig. 2, navigation within the electronic catalog, shown and described above in conjunction with Figs. 1B and 1D, is now described.

For the purpose of brevity, the electronic catalog, and computer files contained thereby or otherwise associate therewith as part of the ASE are collectively referred to herein as "the site."

Accordingly, a user entering the site, may login at any time prior to performing a transaction. The login procedure is seen at portion 83 of Fig. 2. At the time of performing of a transaction, if he has not already logged in, he is invited to login, as seen at 85, so as to enable him to execute a desired transaction.. A registered user enters his login details, via fields linked to the registered user link 26 (Fig. 1B), and, if the details entered are found by registrant status checker 184 (Fig. 1C) to be valid, he is permitted to proceed. The user then has to select the status with which he is entering the site, namely, as a consumer or as a supplier. In the event that he is cleared with that status by registrant status checker 184, he may proceed. In the event that the status selected by him does not match that entered into the databases 52 and 62, however, registrant status checker 184 directs him, via client terminal interface module 186, to re-register so as to add the additional registrant status sought.

As a further option, when entering the transaction area of a specific tender 88, if a user decides not to bid as a sole supplier for the entire quantity of the tender, but would rather collaborate with another supplier, if practical, he can choose to register in the small suppliers' database 69, as described briefly above in conjunction with Figs. 1C and 1D.

As described, above, any non-registered or non-logged in user can choose either to browse the available consumer areas 82 or the open tenders 84, which may also include tenders not yet closed to consumers. Alternatively, if the user is aware of a specific area 86 or specific tender 88, and has the serial number or other identifying data for that area or

tender, he can choose to enter the identifying data directly, so as to circumvent the browsing area of the site.

Referring now to Figs. 3A-6 generally, there are now described the contents of and transaction activities in consumer areas (Figs. 3A-4), and supplier areas (Figs. 5A-6). It is clear that many of the activities and data contained in the consumer areas are also found in the supplier areas. Accordingly, while the consumer areas are described herein in detail, the supplier areas are described herein only with regard to those portions thereof which may be specific to the supplier areas, or as required generally to understand the functional connection and time separation between activities in these two user areas.

Referring now particularly to Fig. 3A, it is seen that the section entitled consumers areas 82 is typically divided into goods 90 and services 92. It will be appreciated, however, that this is by way of example only, and the area may be divided differently, or not at all, at this level. In accordance with the present example, however, a second level menu 94', 94'' may be provided, conveniently arranged with category headings arranged alphabetically, such as one may expect to find in any commercial guide to goods and services. As seen, each second level listing leads to a plurality of third levels, indicated by arrows 96', 96'', of which exemplary categories shown in the drawing are Produce, referenced 98, and Construction, referenced 100, being exemplary goods categories; and Travel, referenced 102, as an exemplary services category.

Once entering into each category, a user may be provided with various sub-category levels, depending on the variety of types of goods or services available, including different levels of quality such as defined by industry specific standards; brand names; required time schedules; and any other relevant terms of reference.

In the present examples, only two sub-levels are shown, although this is for example only, and, as mentioned, many intervening subsequent levels may be present, even though not shown or described specifically herein.

In the examples, therefore, two sub-categories of Produce 98 are fruit and vegetables, of which specific areas 86 - i.e. the ultimate definitions of the required items, are Granny Smith Apples and Iceberg Lettuce, respectively. Additionally, two sub-categories of Construction 100 are Steel and Concrete & Related, of which the specific areas 86 are 6 mm Reinforcing Rods, and Grade A Cement. As a final example, two sub-categories of

Travel 102 are Employee Vacations and Corporate Car Rental, of which the specific areas 86 are Luxury Hotels in Malibu, and Management Fleet.

Referring now to Fig. 3B, it is seen that upon entering a specific consumer transaction area 86, such as those exemplified above in conjunction with Fig. 3A, the potential consumer is provided with a visual and/or audible reminder, referenced 104, of important information, prior to entering an actual purchase order, seen at box 106. Prior to approving the consumer for transaction participation, registrant status checker 184 (Fig. 1C) is operative to check in database 52 (Fig. 1D), via data controller 182, whether the consumer has already logged in as a user. If the consumer has logged in, then he receives, via client terminal interface 186, approval to proceed, and to enter the necessary transaction data. As seen at box 108, the data typically includes the member or registered user ID #, the relevant tender #, the quantity of the specified goods or services required by the user, an indication of the required delivery schedule, and a single contact for the user, typically e-mail or fax, for notices concerning confirmation of the order placed, and notification thereto of the winning supplier and cost, as well as any other relevant information.

In the event that the consumer has not yet logged in, registrant status checker 184 (Fig. 1C) provides this information to client terminal interface module 186 (Fig. 1C), which invites the consumer to login, as seen at box 107 (Fig. 3B). At this stage, the consumer can choose to register, by performing the login process seen at 83 in Fig. 2, or, alternatively, he can decide not to login, in which case he will be returned to a higher portion of the transaction viewing area 24.

In accordance with alternative embodiment of the invention, the confirmation of the purchase order may be provided on-screen rather than, or in addition to, confirmation by e-mail.

As seen in Fig. 4, and referring also to Fig. 1C, once a user has selected a specific tender in the transaction area of the system, the tender manager 188 (Fig. 1C) 'takes over' from the client terminal interface 186 (Fig. 1C). Tender manager 188 is operative to provide all entered data to data controller 182 (Fig. 1C), resident on host computer 10 (Fig. 1A) by use of commercially available software resident therein, which, in turn stores the different types data entered by the user in different data fields, into one or more databases, such as exemplified in Fig. 1D. Inter alia, registration controller 188a, which is a sub-module of tender manager 188, forms a database registering each user registering for a

specific bid tender. A database, which may be a section of database 52 (Fig. 1D), is also maintained for each user. Once a user enters into a tender transaction area, all new data concerning transaction activities of that user, is routed, via tender manager 188 and data controller 182, to a tender database (not shown).

The bid manager 188a (Fig. 1C) is operative, as seen at block 210 (Fig. 4), to extract the quantity of goods or services ordered from the data entered by the user, and to add this quantity to the 'old quantity' i.e. the previous total, for the specific tender, so as to achieve a new total quantity, which is added into 'current consumer tenders' database 54 (Fig. 1D). Subsequently, the tender manager rechecks the date. If the current date is still within the valid date range for the tender, the tender manager enters a 'wait' mode, resets, to await a further transaction entry. Once the cut-off date has passed, tender manager 188 informs the data controller 182 (Fig. 1C) which then moves the tender from the current consumer tenders database 54 (Fig. 1D) to the closed consumer tenders database 56 (Fig. 1D) and to the database of tenders open to suppliers' bids 66 (Fig. 1D).

Referring now to Fig. 5A, it is seen that the structure of the supplier areas 84 is substantially identical to the consumers areas 82, shown and describe above in conjunction with Fig. 3A. Accordingly, the suppliers areas 84 are not described again herein, and, where appropriate, levels, categories, sub-categories and other portions of the supplier areas seen in Fig. 5A, are denoted by reference numerals similar to those used for their respective counterpart portions in Fig. 3A, and with an additional "2" prefix.

Referring now to Fig. 5B, it is seen that upon entering a specific supplier transaction area 88, such as those exemplified above in conjunction with Fig. 5A, the tender manager 188 (Fig. 1C) first checks that the date is past the cutoff date for consumer entry, as seen at 110. If it is still too early for the supplier to bid, due to the fact that the tender has not yet closed to consumers, the user is provided by tender manager 188 with an information screen 112, informing him of this, which then also provides him with a link whereat he can register to be informed once the tender becomes open to supplier bidding.

If the tender has, in fact closed to consumers, and is therefor open to applicant suppliers, the tender manager 188 provides the applicant supplier with a visual and/or audible reminder, referenced 114, of important information, as to the closure date of the tender. This date is clearly important as it may affect the suppliers decision whether to enter a bid at this stage, or whether to enter a bid at all.

Subsequently, as seen at 116, the supplier is provided with a summary of details of the tender, including quantity, a specification of the goods or services, the geographical distribution of the tender and number of points of distribution, the supply schedule, and any other pertinent information. The applicant supplier may then decide to enter a bid, as seen at 118, and - on the assumption that he has either already logged in or logs in at this stage - as shown and described above on conjunction with Fig. 3B for a consumer - he is required to provide all data relevant to the evaluation of his bid, as well as information to be passed on to the consumers for that tender, in the event that the current bid is awarded the tender. As seen at box 120, the data typically includes the member or registered user ID #, the relevant tender #, the total price, and optionally, the unit cost, the minimum time required for delivery, and a single contact for the user, typically e-mail or fax, for notices concerning confirmation of the bid placed, and notification thereto as to whether he has won the tender, and, also, contact details of the consumers with whom he is to be in contact to supply the goods or services.

In accordance with alternative embodiment of the invention, the confirmation of the purchase order may be provided on-screen rather than, or in addition to, confirmation by e-mail.

It should be noted that, while it is not crucial to know unit cost as well as total cost, it entered, the unit costs serves to enable both the supplier and the system to check that the total price stated is, in fact, correct. In the event that there is found to be an inconsistency between the two, the supplier will be informed that an error has occurred and that he should reenter this data.

In accordance with a preferred embodiment of the invention, an inquiry, seen at 181, is posted via client terminal interface 186, as to whether the user wishes to bid for the entire amount of the tender. In the event that the user decides, in fact, to bid for the entire amount, and enters a 'yes' answer, the bidding procedure continues as described above. In the event, however, that the user does not wish to bid for the entire amount, but would be interested in collaborating with another user who also does not wish to bid for the entire amount, he may elect to become registered in small suppliers database 69 (Fig. 1D), maintained for that specific tender by small suppliers tracker 189 (Fig. 1C). This is seen at block 183 in Fig. 5B.

Referring now to Figs. 6 and 1C, tender manager 188 is operative to provide all entered data to data controller 182 (Fig. 1C), which, in turn, stores the different types data entered by the applicant supplier in different data fields, into one or more databases, such as exemplified in Fig. 1D. Inter alia, the data is entered into a database specific to each applicant supplier, as described above with respect to a consumer, but, in the present case, being a section of database 62 (Fig. 1D). Bid manager 188b (Fig. 1C) extracts the inputted bid price from the inputted data, and stores it in a database containing all the bids submitted for the specific tender. Bid manager 188b (Fig. 1C) is operative to evaluate the bid in terms of competitiveness, and if the cost being offered by the applicant supplier is lower than the previous "best bid," then the "new bid" supersedes it so as to become the new 'best bid.'

Subsequently, the tender manager 188 (Fig. 1C) rechecks the date. If the current date is still within the valid date range for supplier bidding for the tender, the tender manager server enters a 'wait' mode, to await a further bid entry. Once the cut-off date has passed, tender manager 188 informs the data controller 182 (Fig. 1C), which then moves the tender from the database of tenders open to suppliers' bids 66 (Fig. 1D) to the database of tenders closed to suppliers 68. Tender manager 188 then activates mail messenger 188cso as to inform the winning supplier of his successful bid. This notification may be either by e-mail or by fax, and is preferably also posted on the site by client terminal interface 186.

Referring now to Figs. 7 and 8, the process of registering in a small suppliers database 69 (Fig. 1D) for a specific tender, is now described. As seen in Fig. 7, a user electing not to bid for an entire tender, as shown and described above in conjunction with Fig. 5B, enters a procedure, indicated generally 183, for registering in a small suppliers database 69 (Fig. 1D), specifically for that tender. Initially, as seen at block 185, the small supplier is asked, by means of client terminal interface, to confirm that he wants to register in database 69. As will be appreciated from the description below, once being registered in the small suppliers database, contact details of the registrant small supplier will be made available to other registrant small suppliers.

If the user decides not to register himself, he can elect to exit to a higher level I the site. If he elects to continue, there follows a logging in check by registrant status checker 184, and an invitation, for a non-logged in user, to login, substantially as described above in conjunction with Figs. 3B and 5B. The registrant small supplier, referred to herein as a

'first' small supplier, is then invited to enter data which will be useful to other small suppliers with whom the first supplier may wish to collaborate in supplying the entire amount of the specific tender. After entering the required data, the small suppliers tracker 189, informs the registrant small supplier, via client terminal interface 186, that he is now registered, and the number of other small suppliers already listed in the database 69. There may also be provided a hyperlink for displaying the details of the other registrant small suppliers, providing sufficient information to the first registrant small supplier so as to enable him to decide whether or not to contact one or more of them, so as to collaborate with them in bidding for the tender.

Preferably, in the event that two or more registrant small suppliers decide to collaborate, as described, they register on the site as a single applicant supplier, and proceed generally as described above in conjunction with Figs. 2-5B, above.

Referring now to Figs. 8 and 1C, small suppliers tracker 189 is operative to provide all data entered by registrant small suppliers to data controller 182 (Fig. 1C), which, in turn, stores the data in small suppliers database 69 (Fig. 1D). Upon request by first registrant small supplier, as described above in conjunction with Fig. 7, the small suppliers tracker 189 is operative to call up all relevant or requested data from database 69, for display to the registrant small supplier via client terminal interface 186. Subsequently, the small suppliers tracker 189 (Fig. 1C) rechecks the date. If the current date is still within the valid date range for supplier bidding for the tender, the small suppliers tracker 189 enters a 'wait' mode, to await a further entry. Once the cut-off date has passed, small suppliers tracker 189 erases the contents of database 69.

It will be appreciated by persons skilled in the art that the present invention essentially acts as a wholesale agent which enables the supply of goods and services to consumers at optimal prices, by the following:

1. the system combines orders into single tenders so as to render them more attractive to applicant suppliers, and virtually assures the consumers of the best prices, due to the fact that the applicant suppliers know that only the lowest price will win the whole order;
2. due to the fact that different orders for similar goods or services by different consumers are combined, each consumer benefits from discounted prices which, alone, he would not normally have been able to obtain due to the relatively small size of his individual order compared with the size of the total tender;

3. the system removes the necessity, on the part both of consumers and suppliers, of much time, effort, and cost that they currently have to invest in finding the best deals;
4. the system also removes the potential for corruption, due to the fact that it operates on the basis of the best price only, and that it is fully automated, so that fewer individuals have access to the wheeling-and dealing side of the corporate and institutional supplies markets.

It will be appreciated by persons skilled in the art that the scope of the present invention is not limited by what has been shown and described hereinabove, purely by way of illustrative example. Rather, the scope of the present invention is limited solely by the claims, which follow.

CLAIMS

1. An agent system of electronic commerce implemented over a wide area computer network, which includes:

a host computer system arranged in communicative association with a plurality of client terminals;

an electronic catalog containing transaction areas listing available transactions between consumers and suppliers, stored in said host computer system;

a client terminal interface implemented, in software for facilitating selection for display on selected ones of said client terminals by consumers and suppliers, via said client terminals, of portions of said electronic catalog;

a tender manager implemented in software, for facilitating entering by consumers, via said client terminals, of consumer transaction data including the identification by the consumers of a similar set of goods or services sought to be purchased thereby, into a current consumer tenders database stored in said host computer system, wherein, after a first predetermined time has elapsed during which the set is accumulated, said tender manager is operative to prevent addition to the set of additional goods or services by consumers, and to store the set as a tender for bidding by applicant suppliers seeking to provide the set of goods or services;

a bid manager implemented in software, associated with said tender manager, for facilitating entering by applicant suppliers, via said client terminals, of bid transaction data for supplying to the consumers the goods or services in the tender at terms sought by the applicant suppliers to be the most competitive compared with bid transaction data entered by other applicant suppliers, in accordance with predetermined rules implemented in said bid manager,

wherein said bid manager is operative to permit bidding by applicant suppliers during a second, predetermined time period,

and wherein, said bid manager is operative to evaluate, in accordance with the rules, all bid transaction data entered during said time period, so as to determine a winning supplier; and

a messenger implemented in software, for informing the winning supplier and the consumers as to the outcome of the tender, thereby to facilitate supply of the set of goods or services to the consumers by the winning supplier,

wherein said tender manager and said bid manager are preprogrammed so as to prevent overlap of said first and second time periods.

2. An agent system according to claim 1, also including a database of registered users, and wherein said client terminal interface is further operative to invite a user to login and to register, and said agent system also includes:

a database of registered users; and

a registrant status checker, implemented in software, for checking legality of a user seeking to enter said transaction areas so as to add to the set of goods or services during said first predetermined time period if the user is a consumer, and seeking to bid on a tender during said second predetermined time period, if an applicant supplier, wherein, in the event of a user not having a legal status, said registrant status checker is operative, via said client terminal interface, to prevent the entry of the non-legal user into said transaction areas.

3. An agent system according to claim 2, and further having a data controller, implemented in software, for storing different types of data entered by users from said client terminals across said network into said host computer system, into different predetermined databases,

and wherein said data controller is operative to cooperate with said client terminal interface, said tender manager, said bid manager, and said registrant status checker, so as to receive data therefrom and to provide selected data thereto.

4. An agent system according to claim 2, wherein said client terminal interface is operative to provide said transaction areas of said electronic catalog, for viewing only, to non-logged in users,

and wherein, in response to an attempt by a non-logged in user to enter transaction data, said client terminal interface is operative to invite users to login so as to permit entering of transaction data thereby.

5. An agent system according to claim 1, and also including a small suppliers tracker, implemented in software, and associated with said tender manager, for maintaining, at least

for the duration of said second time period, a database for small suppliers not wishing to enter bid transaction data for the entire set of goods or services in a single tender,

and wherein said small suppliers tracker and said client terminal interface are selectably operable to display on said client terminals of the small suppliers, details of small suppliers listed in said database for small suppliers, thereby facilitating collaboration between at least two of the small suppliers so as to provide a single, joint bid, for the entire set of goods or services in the tender.

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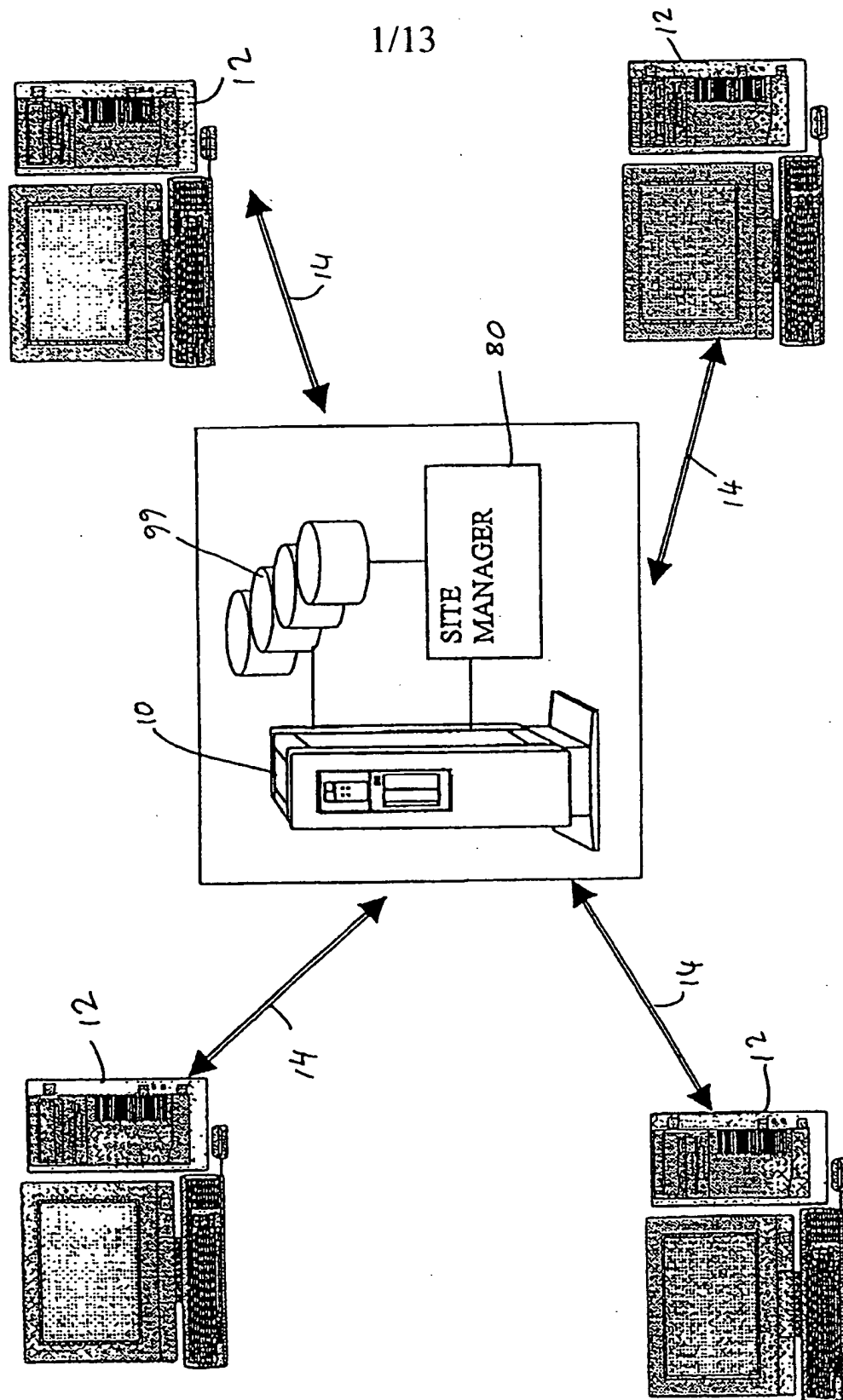
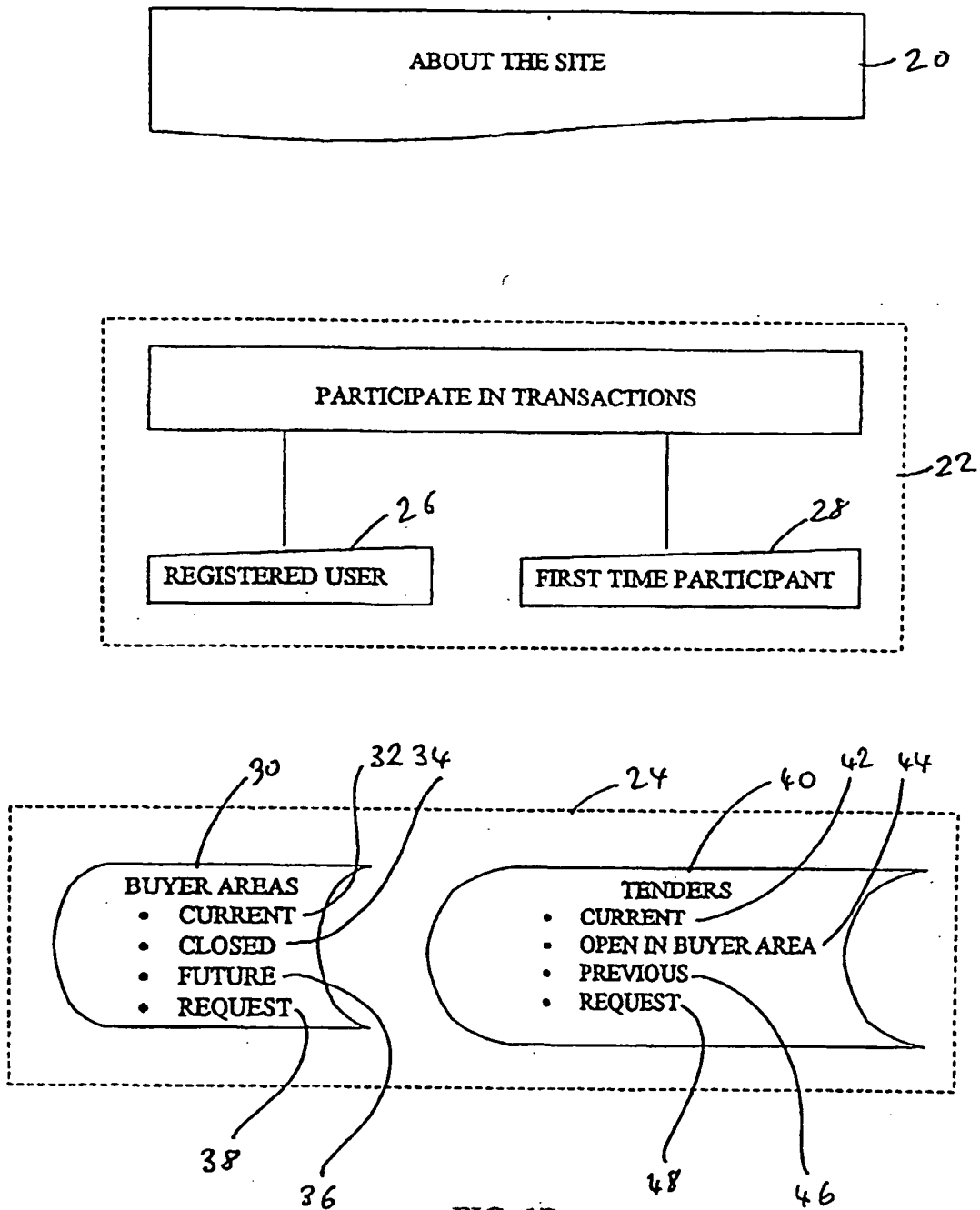
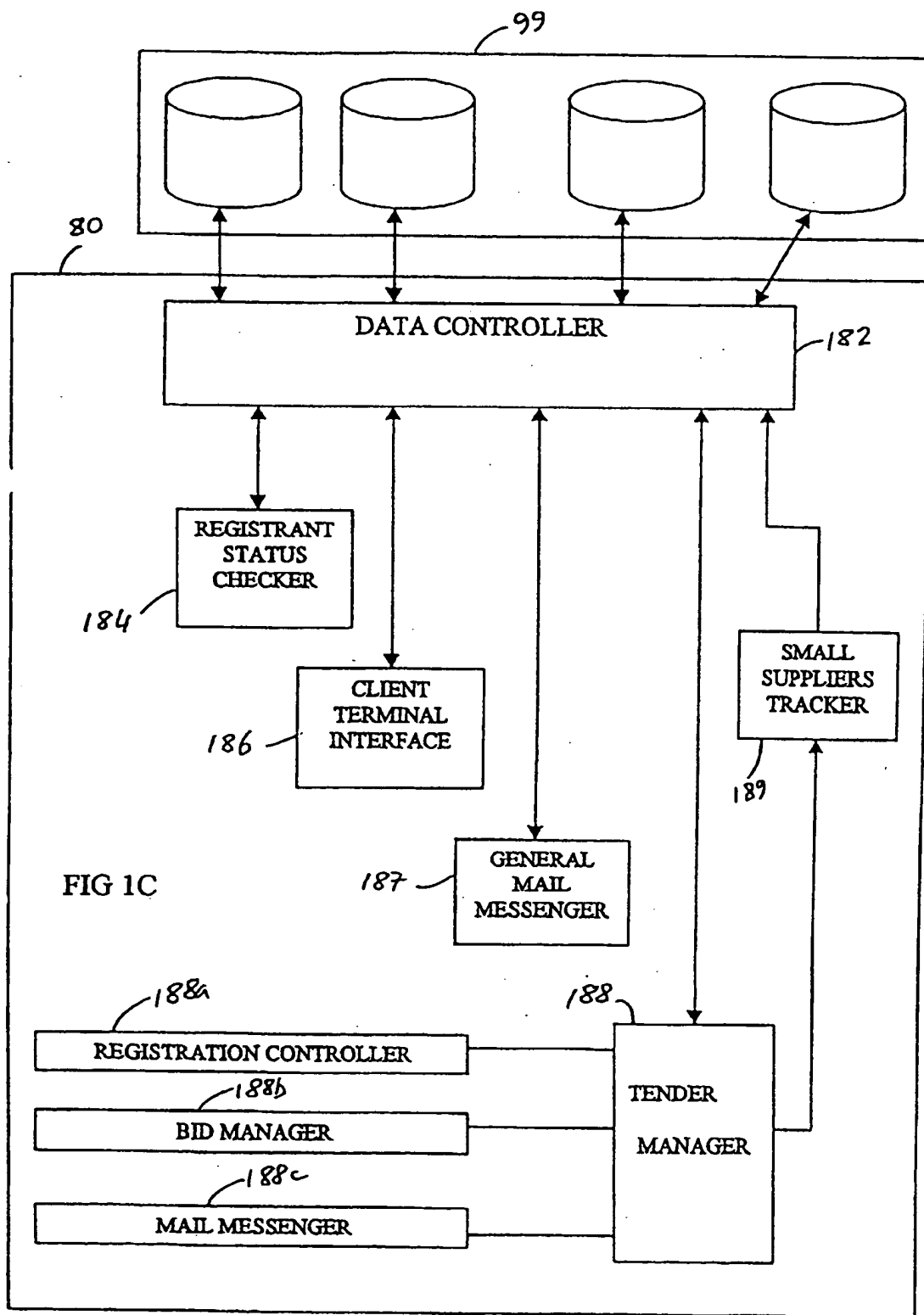


FIG. 1A

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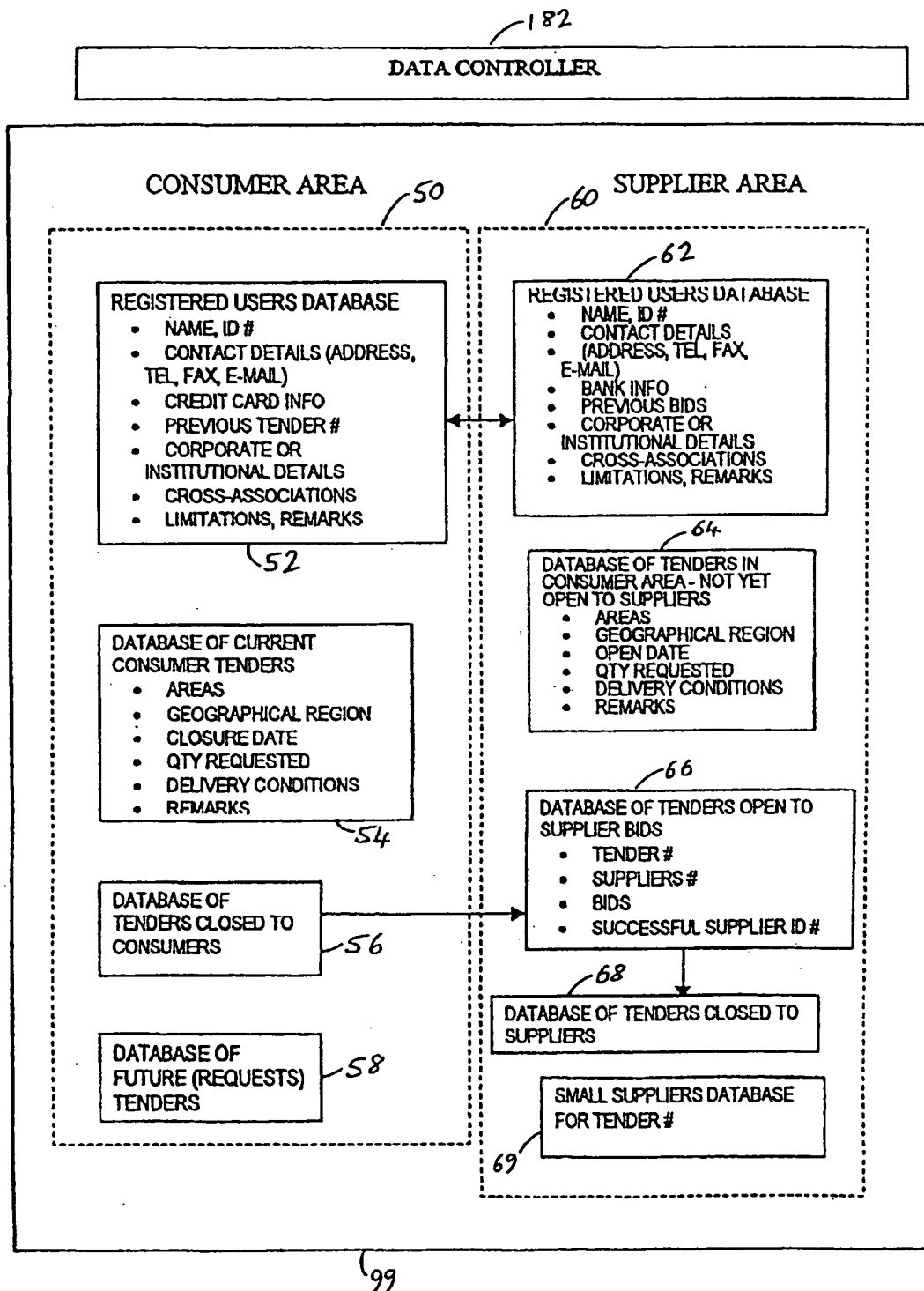
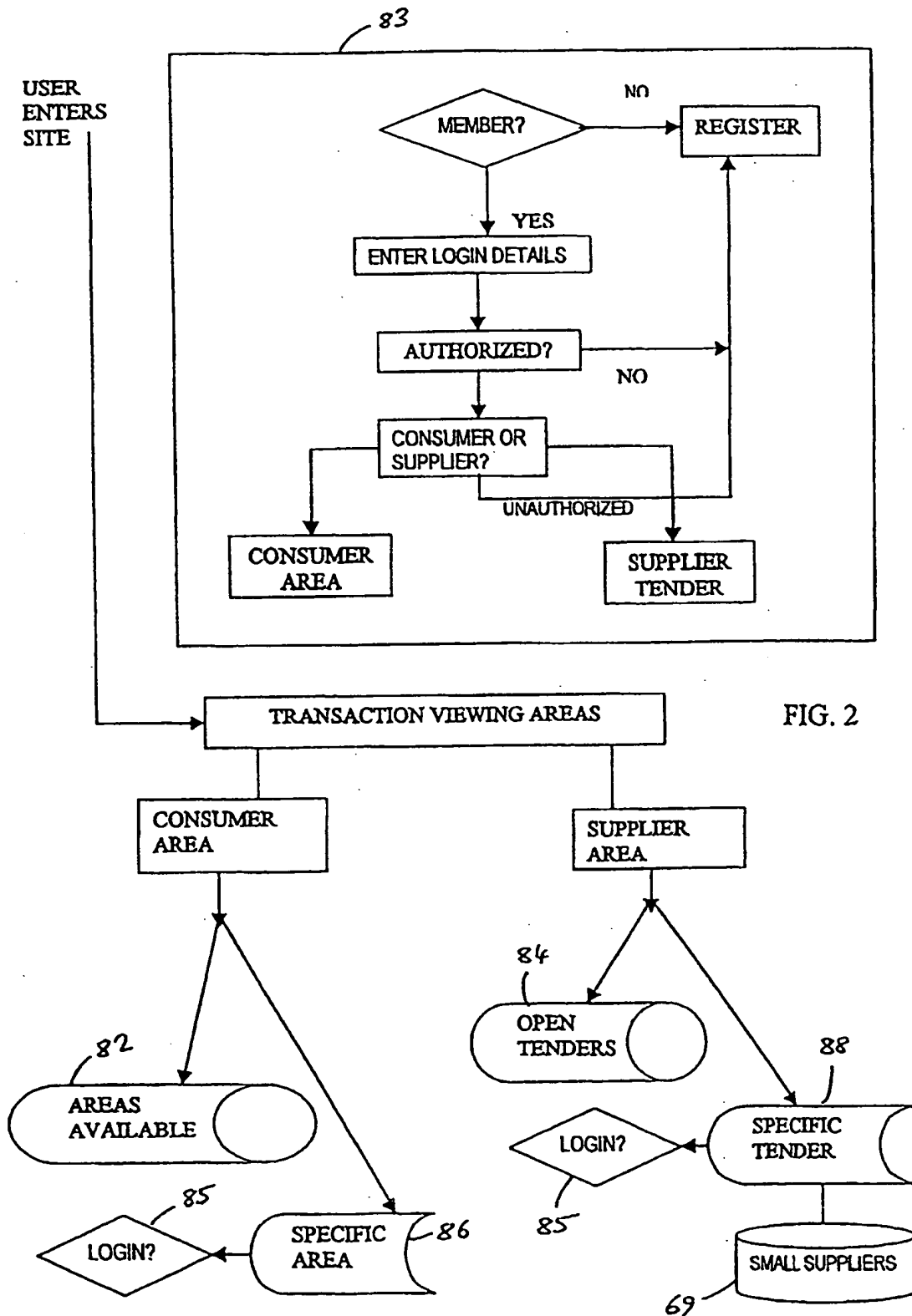
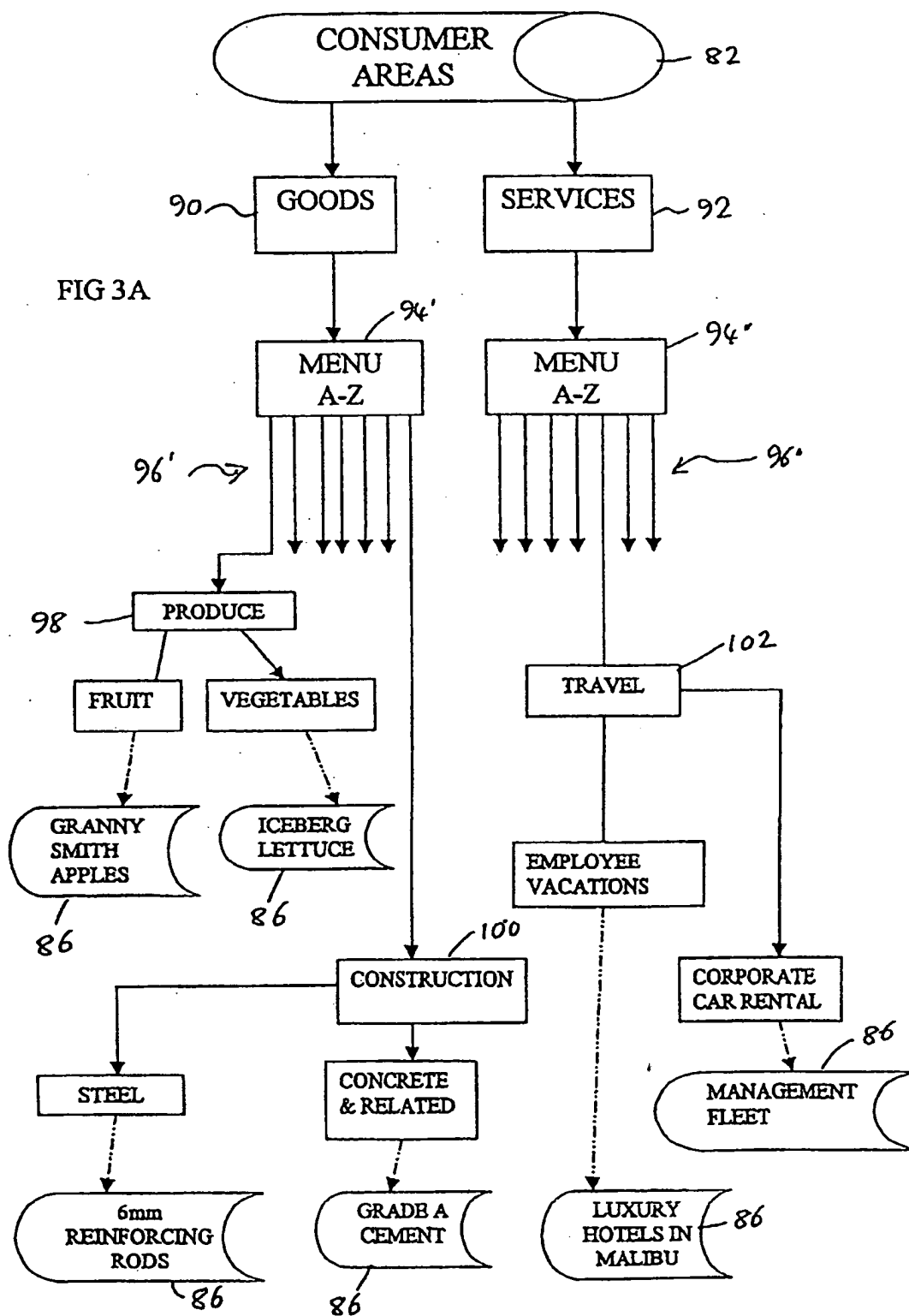


FIG. 1D

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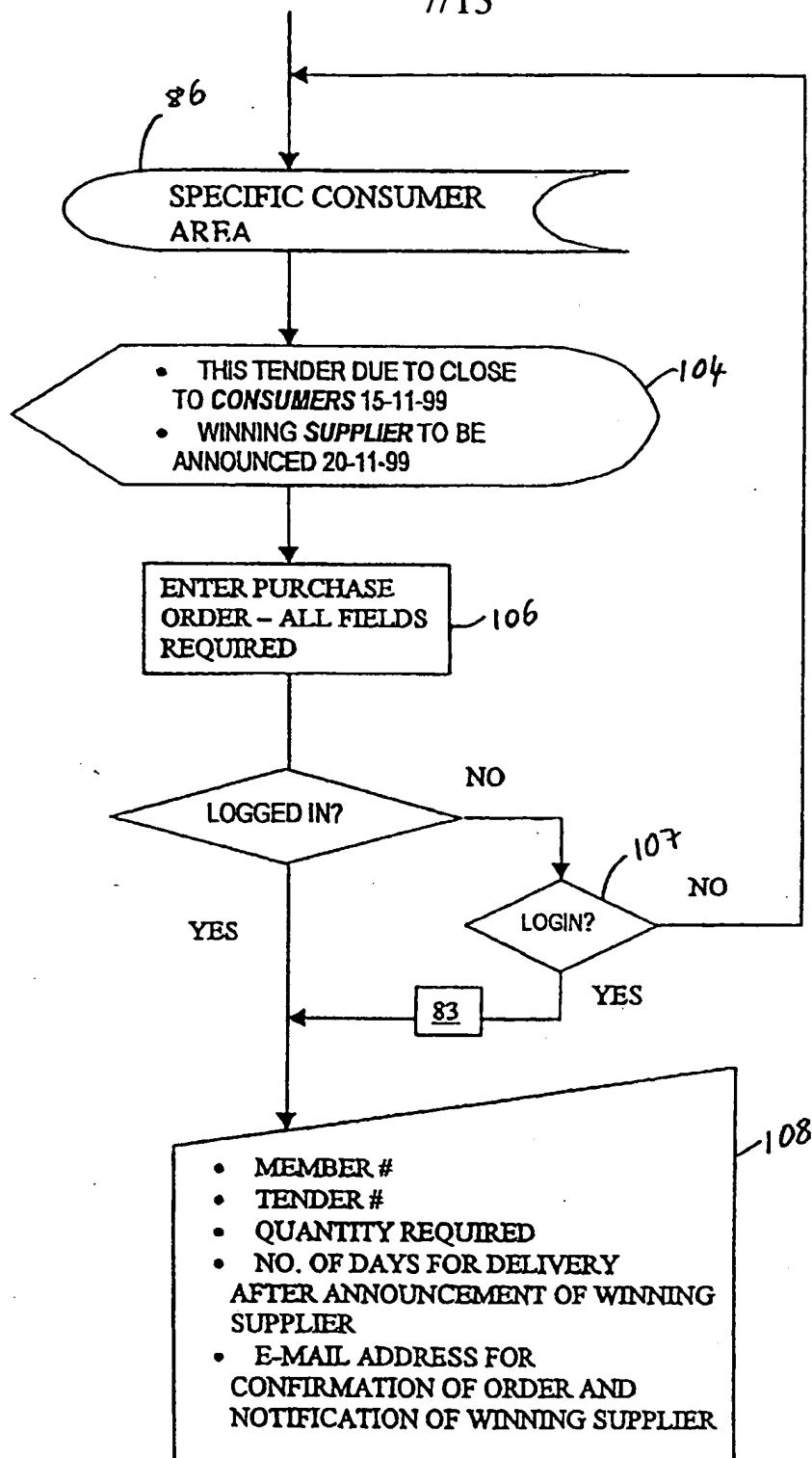


FIG 3B

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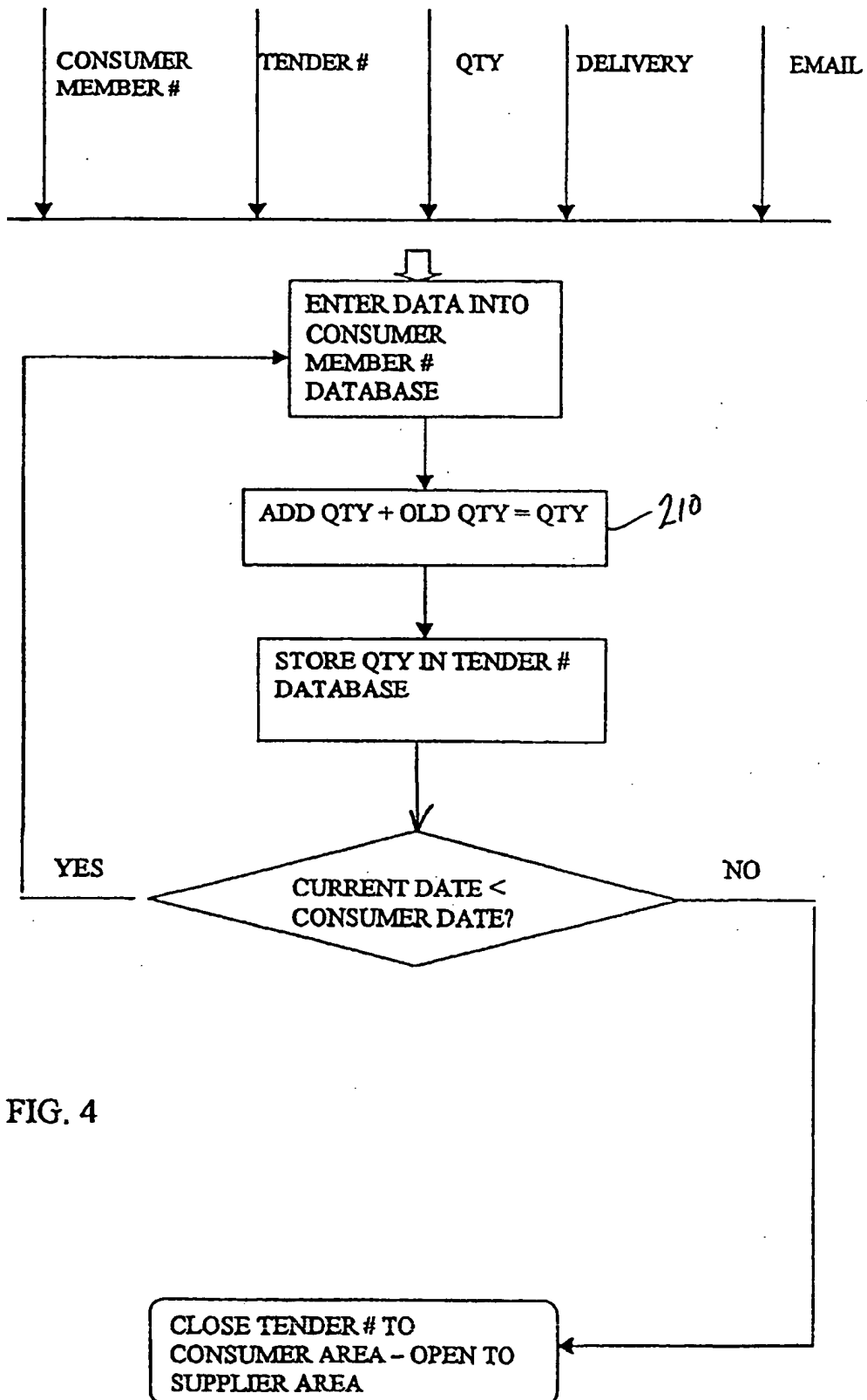
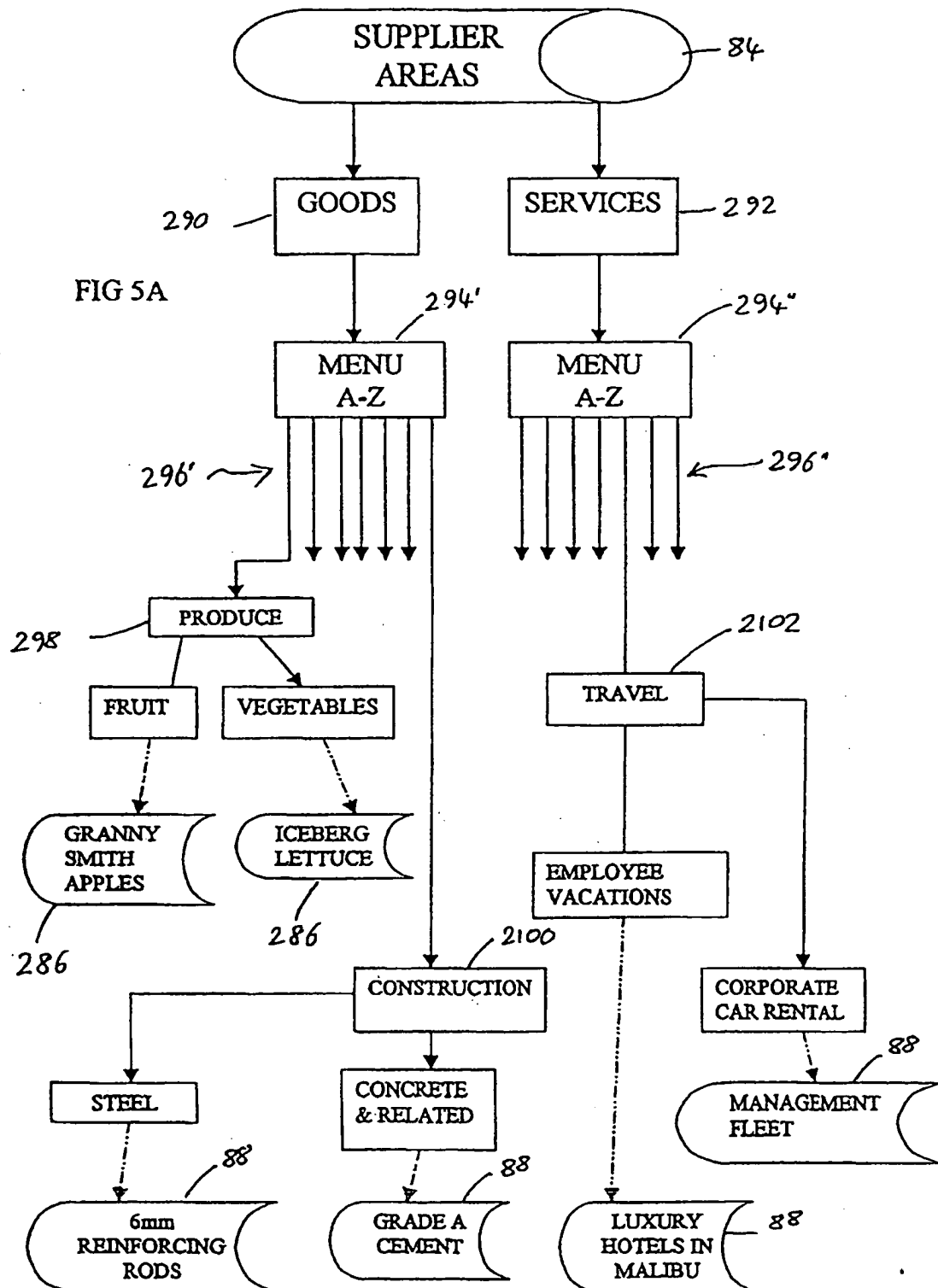


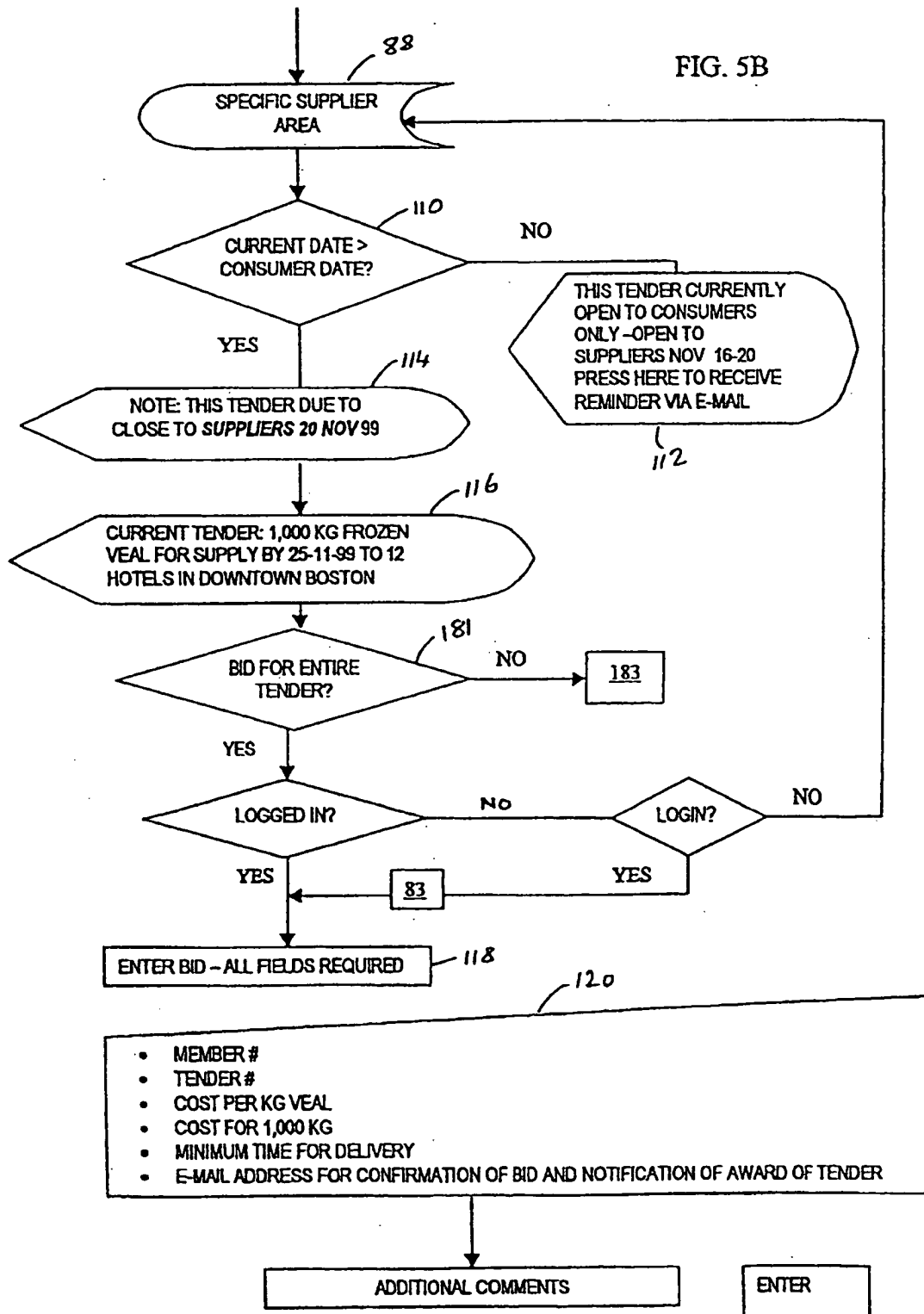
FIG. 4

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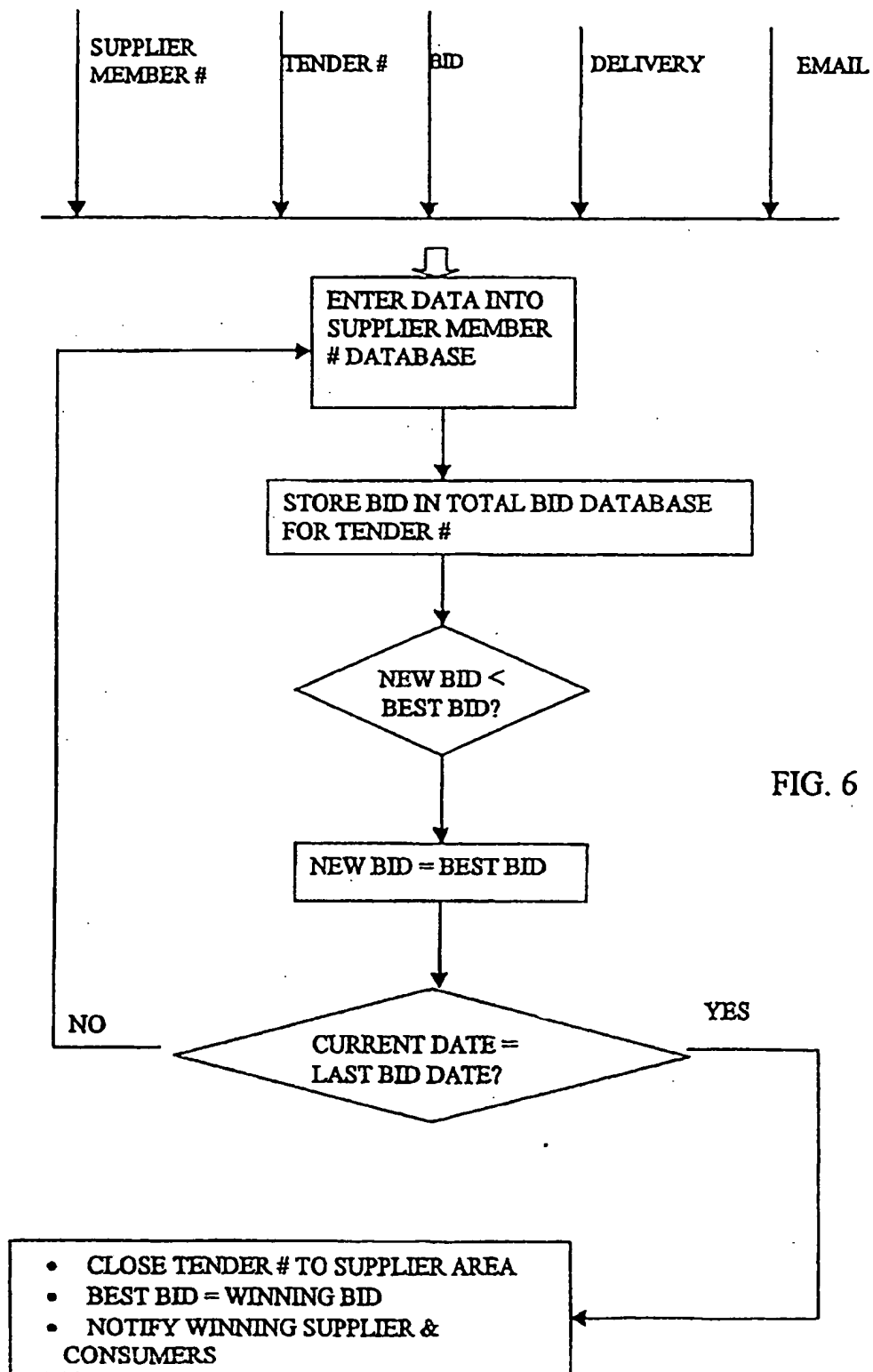


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FIG. 5B

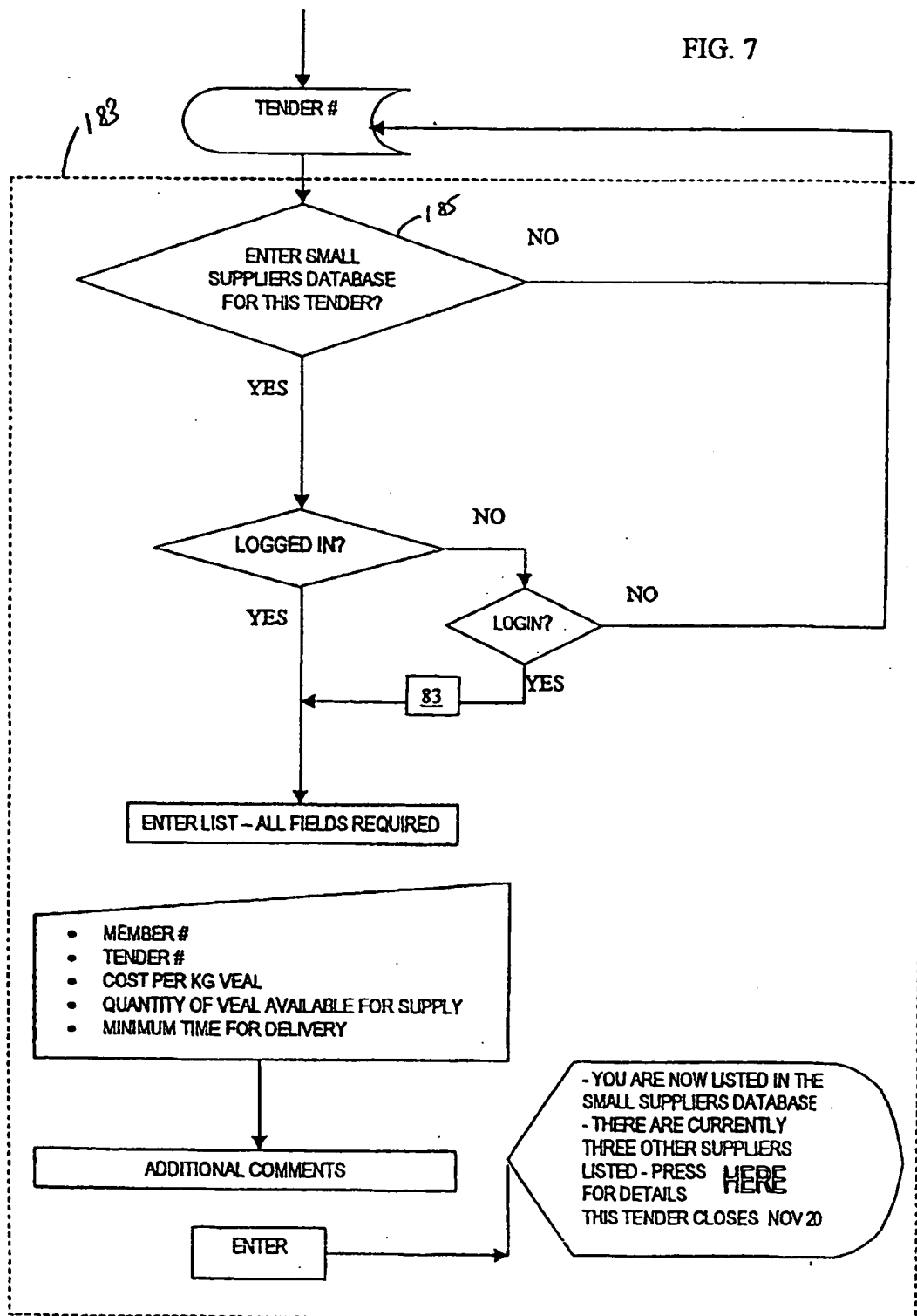


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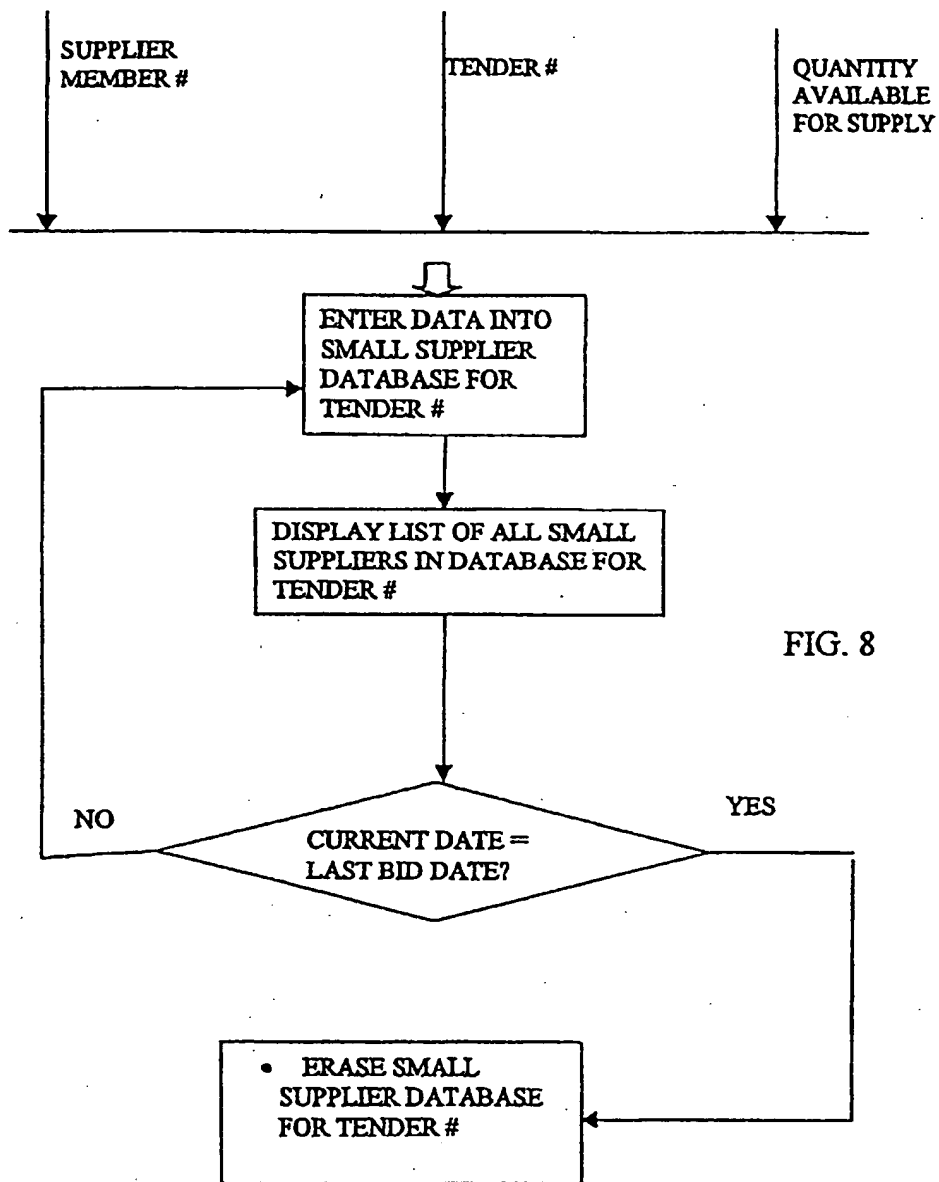


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FIG. 7



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